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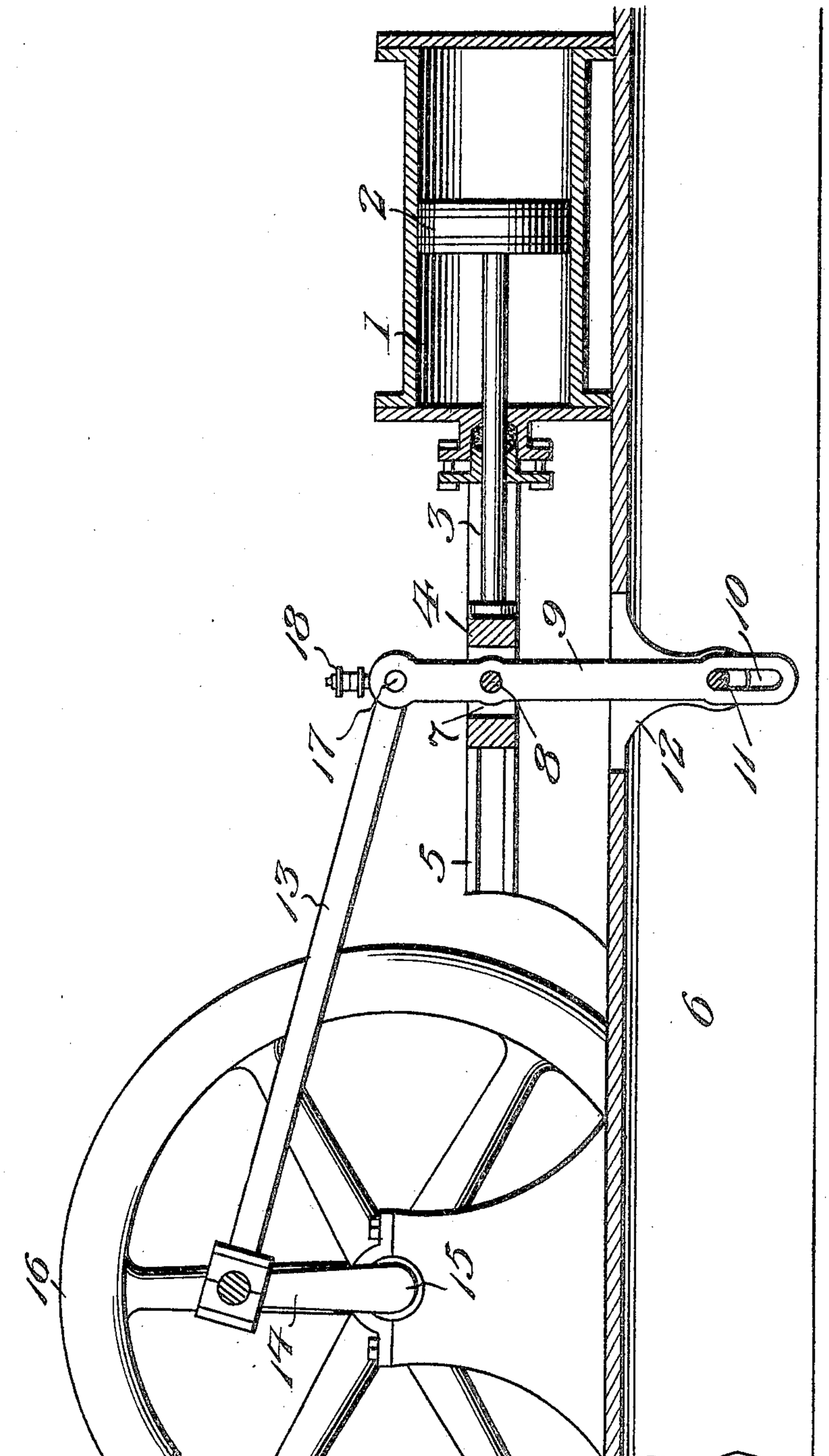
W. L. WILSON.

POWER TRANSMITTING APPARATUS.

APPLICATION FILED DEC. 13, 1904.



Witnesses

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WILLIAM L. WILSON, OF TILDEN, ILLINOIS.

POWER-TRANSMITTING APPARATUS.

No. 812,626. Specification of Letters Patent. Patented Feb. 13, 1906.

Application filed December 13, 1904. Serial No. 236,706.

To all whom it may concern:

Be it known that I, WILLIAM L. WILSON, a citizen of the United States, residing at Tilden, in the county of Randolph and State of Illinois, have invented new and useful Improvements in Power-Transmitting Apparatus, of which the following is a specification.

My invention has relation to improvements in engines; and it consists in the construction and arrangement of parts, as will be hereinafter described, and particularly pointed out in the claim.

In the accompanying drawing the view is a vertical longitudinal sectional elevation of an engine embodying the invention.

Referring to the drawing, 1 designates an engine-cylinder in which is mounted for reciprocation a piston-head 2, carried by a rod 3, equipped at its outer end with a cross-head 4, adapted for sliding movement in a horizontal guide 5, supported upon the base 6 of the engine-frame. These parts, except as hereinafter explained, may be of the usual or any appropriate construction and material.

The cross-head 4 is slotted at 7 and has fulcrumed therein upon a horizontal pintle or axle 8 a normally vertical connecting member or lever 9, slidably connected at its lower end, by means of a slot 10 and pin 11, with a bearing 12, provided on the frame 6, there being pivoted to the upper end of the lever 9 one end of a connecting-rod 13. The rod 13 is connected at its other end with the crank-arm 14 of the engine drive-shaft 15, upon which is fixed a fly-wheel 16. The pivotal joint 17, between the lever 9 and connecting-rod 13, is lubricated from a suitable oil-cup 18.

In practice as the piston 2 reciprocates the lever 9 will, owing to its pivotal connection with the cross-head 4, be moved back and forth upon its loose pivot 10 11, and thus impart motion to the connecting-rod 13 for operating the shaft 15 through the medium of the crank 14, it being apparent that by the employment of the lever 9 the stroke of the connecting-rod 13 will be materially increased as compared with the stroke of the engine-piston. It is to be particularly observed that the pivotal connection between the cross-head 4 and lever 9 is disposed about midway between the center and upper end of the latter, thus giving an additional throw to the rod 13 of about one-third of the length of the lever 9 and of about one-third of the stroke of the piston 2. It is further to be observed that owing to the lever having a movable fulcrum and being pivoted in a slot within the cross-head the friction is minimized, thus entailing no material increase in the power necessary for driving an engine having my improved connection between the piston and connecting-rod.

By having the lever 9 pivotally disposed in the slot 7 of the cross-head 4 and constructing said slot of the cross-head long enough to clear the opposite edges of the pivoted portion of the lever 9 said lever 9 is permitted to oscillate in consonance with the movement of the engine-crank without striking the opposite end walls of the slot, and thus reduce wear on and injury to the said lever 9 to a minimum. This assemblage of the lever 9 in the slot 7 of the cross-head 4 in conjunction with the lower slotted end 10 of said lever 9 or the lower loose fulcrum serves to operate the lever 9 during oscillation in opposite directions, and thus avoid the least obstruction to the operation of the coöperating elements connected to said lever 9.

Having thus fully described the invention, what is claimed as new is—

A power-transmitting mechanism comprising a reciprocating element, a slotted cross-head connected therewith, a lever extending through the slotted cross-head and being pivotally connected therewith about midway between the center and the upper end of the lever, the pivoted portion of the lever being in the center of the slot of the cross-head and said slot being of a length to give a clearance to the opposite edges of the lever during oscillating movement of the latter, said lever having a slot at its lower end, a connecting-rod pivotally attached to the upper end of the lever, a shaft having a crank-arm secured to the connecting-rod, the movable fulcrum and the clearance of the intermediate pivoted portion of the lever serving to operate conjointly during oscillation of the lever, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM L. WILSON.

Witnesses:
WILLIAM STEVENSON,
THOMAS F. LINDSAY.